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Marilyn Huestis

In the 1950s, when the world seemed a safer place, a parent might send a young child on an overnight train to a relative in a distant city. Marilyn Huestis was five years old and her sister was three when they made the journey from Hyattsville, Maryland, to Jacksonville, Florida, to see their grandparents. As it sped along, the train hit and killed a man who had wandered onto the tracks, which delayed the trip for 12 hours. Later, the two sisters offered their seats to a woman traveling with three children and then moved to another car. The train was delayed yet again as the conductor, who had been checking in on the two girls, searched frantically for the apparently missing sisters.

"The next year—we were 6 and 4—my mother put us on a bus. I learned responsibility pretty early," said Huestis. One might say that she had been learning since she was a toddler. When she was one and a half, her father, a Marine Corps pilot, was killed in a plane crash while flying home from a mission. Her mother, Margaret, was three months pregnant with her sister and would soon be diagnosed with a malignant thyroid tumor. "She couldn't do chemo or radiation until the pregnancy was over, so she really thought she was going to leave us as orphans," said Huestis.

Margaret survived the ordeal and went on to marry another Marine Corps pilot who would raise and love Marilyn and her sister Robin as if they were born to him. By then, she had already begun teaching her daughters—and she would have another, Anne—two life lessons: "You need to have a career, you need to be able to support yourselves—that was a very strong message from really early on," said Huestis, who is chief of Chemistry and Drug Metabolism, at the National Institute of Drug Abuse (NIDA), National Institutes of Health. "She made sure that we knew that life throws you curves, it can be full of hardship—we'd better be prepared," said Huestis's sister, Anne Thomas.

The second lesson was really the flip side of the first: "You live your life to the fullest in the moment because you never know what can happen—things could change in a moment," Huestis said.

Huestis has taken her mother's lessons to heart. She began working in a toxicology lab in 1969 while still an undergraduate, and although she would soon marry and have children of her own, she has rarely stopped working. A natural in the lab, she began developing assays for a wide array of toxicological samples. Her reputation for hard work and creativity grew, and soon she was running clinical laboratories, and eventually whole departments, all the time caring for her family.

When those demands eased, she went back to school and, in 1992, earned a doctorate—while working part-time at NIDA—for her transformative human clinical research on cannabis. Until she came along, no one knew what exactly happened as a person smoked the drug. She helped unlock the secret of marijuana's allure by showing how each inhalation affects the brain almost immediately.

She would go on to investigate a wide variety of drugs—from marijuana to cocaine, methamphetamine, ecstasy, and heroin—studying their effects, not just on a person's body and brain but also in utero. In the late 1990s, she would establish her own human clinical research lab—one of a handful in the world to administer illicit substances to human subjects—where she continues to pull off some of the most challenging research in toxicology.

"There are very, very few places in the United States today where you can do the kind of toxicology study—particularly in the context of substance abuse—that she can do there. And it's a very difficult position. She only has to screw up one clinical experiment and the whole program will be dead in the water," said Bryan Finkle, a longtime colleague.

In 1998, she was appointed chief of Chemistry and Drug Metabolism at NIDA and earned tenure soon after—an almost unheard of feat for a woman in clinical science. Since then, as her 70-page C.V. shows, she has published hundreds of papers, earned numerous prizes and awards, and assumed leadership of major professional organizations, which is how Finkle first met her. "I found her bubbling-over enthusiasm for this job of program chair, that most people in their maturity hate and do only as a matter of good conscience, to be really refreshing," said Finkle, who is currently a consulting toxicologist.

She has advised over a dozen PhD students, has helped establish flourishing professional programs in developing countries, and has traveled the world—hundreds of thousands of miles each year—recently visiting Finland, where she was awarded an honorary doctorate of medicine.

She has achieved all this by dint of hard work—and she works almost from the time she wakes up to the time she goes to bed. But it is the flip side of her mother's life lesson—the part about living each moment fully—that

is likely to strike anyone who meets or talks to Huestis. Vibrant and colorful in appearance, she has an energy and enthusiasm that practically spills into a room. She loves what she does. She also happens to love people.

"Marilyn goes out of her way—*out of her way*—to meet people, introduce herself to them, especially if it's their first time at a professional meeting. She truly wants to meet you, she wants to know about you," said Laurel Farrell, a close friend and colleague. What often happens is that people end up adoring Huestis. "I don't know a single person who doesn't like Marilyn," said Finkle.

This radical combination—big heart and big mind—makes Huestis a powerful role model for young scientists. On top of it all, she continues to balance her almost insanely active work life with an incredibly rich personal one. In addition to her elaborate network of students, colleagues, and collaborators, she maintains intimate connections to a sprawling web of family members—children, siblings, nieces, nephews, cousins, and grandchildren. She loves to entertain them at the beautiful, if quirky, multitiered home she shares with her husband, Michael Smith. She thinks nothing of hopping on a plane to visit them for the weekend.

"Her personal life is amazing—her love for her family. When push comes to shove, it's her family," said Farrell, who is currently a consulting toxicologist.

That, too, she may have first learned from her mother. It turns out that Margaret put her young daughters on the Florida-bound train because she didn't want them to lose touch with her late husband's parents. She would meet her second husband, JP, the following year. It would become commonplace for the family, which grew to include a son, John, and then Anne, to pack up the car every few years and follow JP to his next military assignment. After the Marine Corps, he joined the Central Intelligence Agency, taking on dangerous undercover work in Vietnam.

"He landed in Vietnam on the day of the Tet invasion. He was missing—we didn't know for 3 weeks that he was alive," said Huestis. During his long absence, Marilyn, who was nine at the time, would babysit for her siblings, including newborn Anne. After the CIA, her father took a job with Boeing in Seattle, so the family moved once again. Huestis, who was finishing sixth grade, was devastated. "I cried all the way across the country, leaving my friends and family and everything," she said. Her father disliked the new job, so three months later, the family headed back east. "I cried all the way back across the country," Huestis said. In those few months, she had plunged into her new life at school and had even gotten a boyfriend.

She would repeat the experience in her new home in Stony Brook, on Long Island. Indeed, she relives it, even now, every time she enters a room. "I really know what it's like to be standing in the middle of a big group of people feeling totally alone. So my big job at any meeting, even if I'm president of the group, is to find those people immediately and go right to them and introduce myself," she said.

The family settled into a big old historic home, with a huge fireplace and a barn. "We kept horses, and we had dogs and cats and chickens and ducks," Thomas recalled. One summer, Marilyn—by then a student at Mount Holyoke—brought home two prairie dogs. "A classmate, I think it was John Glenn's daughter, asked Marilyn to take them for the summer. We ended up keeping them," said Thomas.

Mount Holyoke was filled with women from prominent families who had been to private schools. Though intimidated, Huestis would thrive. By then, she had discovered her love of chemistry. "I liked that you can reason things. I like that you solve problems, I liked putting pieces together. I liked the scientific method of changing one thing at a time and seeing the effect," she said. She attended lectures in the morning, had labs every afternoon from 1 until 6, ate dinner, and then began her homework at 7. "I worked my tail off," she said. She rose to the top of her class, earning the chemistry department prize her freshman and sophomore years. She thought she might become a doctor. "At 19, I could not kill my laboratory rat," she said. "They wanted us to swing it around by the tail and crack its head. So I decided that if I can't do that, how was I ever going to be a doctor?" She decided instead to be a scientist.

One evening during her sophomore year, at a party arranged by a friend, she met a gymnast who was studying at the Naval Academy in Annapolis, Maryland. Huestis had lots of boyfriends, but this time she was smitten. She got engaged soon after. "I never made a conscious choice—'I want to get married, I want to have kids.' I just knew it. I don't how much was me wanting to do it or that's just what you did. I never questioned it," she said. She had arrived at Mount Holyoke in 1966, on the cusp of a cultural revolution, but she was, in a sense, caught between generations. "When Marilyn was in high school, people still went steady, got pinned, put rollers in their hair, and were perfectly coiffed," said Thomas. Her friends were out protesting the Vietnam War, and although she attributes her liberal political views to that period, that too created conflict. "I came from a military family, and there was a lot of antimilitary feeling. It was difficult to deal with that because I was so proud of my father—who he was and what he did and how he dedicated his life to protect people," she said.

Huestis married at Christmas her senior year and followed her husband to Florida, leaving college a semester early. Within two days of arriving, she was hired by a laboratory along with a young man from a local college. She loved the work, devising new methods for testing exotic toxicological compounds while the young man ran the

standard kits. A year later, she discovered that they were paying him twice as much money. She asked them whether her work was valued less. "They said, 'No, no, no, it's not worth less. It's that you have a husband to support you,'" she said.

Huestis soon left the lab and had her first child, Michael, in 1973. Her daughter Allison was born three years later. A year later she embarked on a master's degree at the University of New Mexico, though the stress of military life, with its long absences, would cause her marriage to unravel. She remarried in 1982, again to a military man, Walt Huestis. The family moved several times, always to follow Walt's military assignments, but Huestis, who never forgot her early work experience, kept working. "Having experienced gender inequality—I think that's been a motivating force," said Thomas. She headed up toxicology labs in far flung cities like Albuquerque and San Diego, and embark on a PhD at the University of Maryland, at the age of 40, while working at NIDA with Edward Cone, who was head of Chemistry and Drug Metabolism. She was set to take a full-time position at NIDA when her husband, by then retired from the military, decided to take a job in industry in California.

Though she was a rising star in her field, Huestis considered herself first and foremost a parent. "It's absolutely the most important job that I have. I've always felt that way," she said. In 1992, she followed her husband to San Diego, where she started an extremely active and lucrative consulting company. "I worked incessantly," she said. During her last year there, she was traveling 40 weeks out of 52, while publishing data from her doctoral research.

In 1995, with her daughter now in college, she left California, and her marriage, and came back, under heavy recruitment by Cone and colleagues, to NIDA. In 1998, Cone announced unexpectedly that he would be retiring and put forth Huestis as his successor. "The NIH, reluctantly I would say, appointed her as an acting director. In no time, of course, it became evident that she was very capable of directing that program," said Finkle.

Huestis is at her desk by 8:00 each morning and leaves between 6 and 8 PM. Her husband—who worked as a toxicologist with the Armed Forces Institute of Pathology for 20 years and who she met in 1996—often has dinner waiting for her in their home, which is perched high above the Severn River. "It's a crazy house that we remodeled," said Huestis. "You drive up and it looks like one story but then you realize it's on this mountainside and it goes down—absolutely gorgeous decks that go right down to the water," said Farrell. Huestis and her husband have a boat and love to take it out on the weekends. "Probably my biggest relaxation is the water. It calms me," said Huestis.

She also loves to entertain and once had a gathering of 170 professional colleagues at her home. "She will come back from somewhere on a Friday—so she's got jet lag—and throw a party at her house on Saturday," said Thomas. She especially loves having her students over and, most of all, her family—which this past year has grown to include four grandchildren. "Her grandkids are her pride and joy," Farrell said. But having even one friend over is cause to break out the champagne, by far her favorite beverage. "She does love her champagne. To me, it fits her perfectly—it's bubbly, it's celebratory," said Farrell.

The champagne flowed abundantly, and perhaps most memorably, in June of 2010, when Huestis was awarded—along with three Nobel Prize nominees and two British knights—an honorary doctorate from the University of Helsinki, an event that happens just once every 10 years. "It was unbelievable. They did the same ceremony that they'd been doing since 1640," she said. After the ceremony, recipients parade through the town wearing silk green top hats and swords.

"So picture this: You have a top hat on, you are holding a sword out in front of you, and you get your diploma under your arm. You are a woman in a long black dress and high heels and you have to go down 72 stone steps," she said. "You come out of this old building, and they have a red carpet all the way across the town square. And you walk with everybody cheering from the town. Then you walk up the steps to the cathedral for a special mass. We danced the minuet. It was 5 days of festivities. It was the nicest thing that will ever, ever happen to me."

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